

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 through 69. (Cancelled).

70. (Currently amended) A system for fixation and processing a tissue sample comprising:

the tissue sample;

an ultrasound transducer ~~responsive to~~ controlled by an ultrasound generator ~~to produce ultrasound;~~ and

~~a first sensor measuring a parameter of said ultrasound immersed in a solution in a~~ reaction chamber;

~~a second sensor measuring a parameter of a sample;~~ and

a central processing unit responsive to a first signal from ~~said first~~ the sensor ~~and a second signal from said second sensor wherein the central processing unit to regulate controls said~~ the ultrasound generator and adjusts a the frequency or an intensity of ~~said~~ the ultrasound in response to said first signal from ~~said first~~ the sensor ~~and said second signal from said second sensor.~~

71. (Cancelled)

72. (Currently amended) The system of claim 70, wherein ~~said~~ the sensor detects a parameter of ~~said~~ the sample ~~is~~ selected from the group consisting of:

a temperature,

a size,

a tissue type, and

a tissue density, and

~~an infrared temperature.~~

73. (Currently amended) The system of claim 70, wherein ~~said~~ comprising a second sensor ~~is~~ selected from the group consisting of:

an ultrasound sensor, and
an infrared temperature sensor.

74. (Currently amended) The system of claim 70, wherein ~~said first~~ the sensor measures a frequency or an intensity of said ultrasound.

75. (Currently amended) The system of claim 70 wherein ~~said first~~ the sensor produces readings which are processed by said central processing unit.

76. (Currently amended) The system of claim 70 wherein ~~said~~ the ultrasound generator is controlled by ~~said~~ the central processing unit.

77. (Currently amended) The system of claim 70 wherein ~~said~~ the transducer generates ultrasound of a frequency of at least 100 KHz.

78. (Currently amended) The system of claim 77 wherein ~~said~~ the transducer generates ultrasound of a single frequency or of multiple frequencies in the range 100 KHz to 50 MHZ.

79. (Currently amended) The system of claim 70 wherein ~~said~~ the ultrasound transducer produces ultrasound of a power in the range of 0.01-200 W/cm².

80 through 91. (Cancelled).

92. (New) The system of claim 70 wherein the sample is immersed in a solution of 10% formalin.

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93. (New) The system of claim 70 wherein the sample is immersed in alcohol to dehydrate the sample.

94. (New) The system of claim 70 wherein the sample is immersed in xylene.

95. (New) The system of claim 70 wherein the sample is immersed in paraffin.

96. (New) The system of claim 70 wherein a solution is pumped into the reaction chamber as a first solution is pumped out of the chamber.

97. (New) The system of claim 70 wherein a used solution is pumped to a waste receptacle.